

CLAIMS

1. A connector (100) for a haemostatic valve assembly, comprising a longitudinally extending main section (114) having a longitudinally extending, through-going passage (110;112) and a valve (128) at a proximal end of the connector, the valve having an open state in which an elongate member may be inserted into the passage (110;112), and a closed state, the valve comprising an indicator (136;140;142) for indicating the state of the valve.
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2. A connector according to claim 1, wherein the valve (128) comprises a valve opener (132;133) which is longitudinally displaceable along an outer surface of the main section (114) of the connector (100), such that the state of the valve (128) may be changed by
10 displacing the valve opener (132;133) in relation to the main section (114).
3. A connector according to claim 2, wherein the indicator (136;140;142) comprises optical means for providing an optical appearance of at least a part of the connector (100) in the open state which is different from an optical appearance of that part of the connector in the closed state.
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4. A connector according to any of claims 1-3, wherein the valve (128) further comprises an elastomeric closure member (130) arranged to seal the proximal end of the connector (100) in the closed state of the valve (128).
5. A connector according to claim 4, wherein the valve opener (132;133) comprises a puncture member (134) which extends co-axially with and at least partly inside said passage (110;112), and which is arranged such with respect to the closure member (130) that it penetrates the closure member (130) in the open state of the valve, the closure (130) member thereby closing about an outer surface of the puncture member (134), and such that it does not penetrate the closure member (130) in the closed state of the valve (128).
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6. A connector according to any of claims 2-5, wherein the valve opener (132;133) comprises a transparent portion (135; 139; 142) and an opaque portion (140), and wherein the main section (114) of the connector, at a proximal end thereof, comprises a coloured section (136) which is covered by the opaque portion (140) of the valve opener when the valve is in the open state, and which is visible through the transparent section (135; 139; 142) when the valve is in the closed state.
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7. A connector according to claim 6, wherein the coloured section (136) is comprised in a coloured member which is connected to the main section (114) via a connection having a projecting portion (144) which is integral with one of said sections (114;136) and adapted to
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engage a recessed portion (146) of the other one of said sections (114;136), so as to mutually secure the sections (114;136) in the longitudinal direction.

8. A connector according to any of claims 1-6, comprising a side arm (122) for connecting the connector (100) to a manifold.

5 9. A connector according to any of claims 4-8, where a face (156) of the closure member (130) abuts a proximal end surface (152) of the main section (114), one of said face and end surface (152;156) being provided with a protrusion (158) for engaging a corresponding Indentation (154) provided in the other one of said face and said end surface (152;156).

10 10. A connector according to claim 9, wherein the closure member (130) is made from a resilient material which is adapted to deform in the area of said protrusion and said Indentation when said face and said end surface (152;156) are biased towards each other, so as to thereby provide a liquid tight seal near an outer periphery of the passage (110;112) at a proximal end thereof.

15 11. A connector according to any of claims 4-10, wherein the closure member (130) defines a first and a second, opposite end surface (156;160) and at least one passage slit (164), the passage slit being normally closed and extending between the two end surfaces, the passage slit being arranged to open by a tubular member (134) being extended therethrough, the passage slit (164) having a length at the first surface which is longer than its length on the second surface.

20 12. A connector according to claim 11, comprising a plurality of passage slits (164) which define a first, common point of contact (166) on the first surface (156) and which extend radially outwardly from the point of contact (166) at the first surface (156).

13. A connector according to claim 12, wherein the plurality of passage slits (164) define a second, common point of contact (168) on the second surface (160).

25 14. A connector according to any of claims 11-13, wherein at least one of the passage slits (164) has a length on the second surface (160) which is at most 1/10th of the length of that passage slit on the first surface (156).

30 15. A connector according to any of claims 11-14, wherein at least a portion of the first end surface (156) and at least a portion of the second end surface (166) define two substantially parallel planes, and wherein an axis extending between the first and second common point of contact is substantially perpendicular to the two planes.

16. A connector according to any of claims 11-15, wherein at least a portion (170) of one of the first and second end surfaces (156;160) is concave.

17. A connector according to claim 13, wherein said concave portion (170) is provided on the second surface (160).

5 18. A connector according to any of claims 4-17, wherein the closure is arranged near a proximal end of the connector.

19. A connector according to claim 18, wherein the second surface (160) of the closure member is oriented to face the proximal end of the connector.

10 20. A kit comprising a connector (100) according to any of claims 8-19, and a side arm tubing (126) for the side arm (122) of the connector.

21. A kit according to claim 20, further comprising a stopcock (124) to be connected to one end of the side arm tubing (126).

22. Use of an indicator (136;140;142) for indicating a closed or open state of a haemostatic valve (128) integrated in a connector (100) of a haemostatic valve assembly.

15 23. Use according to claim 23, wherein optical means (136;140;142) are employed for providing an optical appearance of at least a part of the connector (100) in the open state which is different from an optical appearance of that part of the connector in the closed state.